

Enhancing entrance into PTSD treatment for post-deployment veterans through collaborative/integrative care

Peter A Brawer, PhD,¹ Ann M T Brugh, MA,¹ Richard P Martielli, PhD,¹ Shawn P O'Connor, PhD,¹ Julie Mastnak, PhD,¹ Jeffrey F Scherrer, PhD,^{1,2} T Eugene Day, Dsc¹

¹Saint Louis Veterans Affairs' Medical Center, 501 N. Grand Blvd, St. Louis, MO 63103, USA

²Washington University in St. Louis, St. Louis, USA

Correspondence to: P A Brawer
Peter.Brawer@va.gov

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ABSTRACT

High rates of posttraumatic stress disorder (PTSD) among post-deployment veterans and the associated long-term consequences highlight the importance of early identification and treatment. The Veterans Health Administration (VHA)'s Primary Care Mental Health Integration (PCMHI) program aims to increase identification and access to care for veterans with mental illness, decrease stigma, improve continuity of care, and the efficiency of healthcare utilization. This project examines PCMHI's progress towards these goals within the Operation Iraqi Freedom/Operation Enduring Freedom (OEF/OIF) population. We examined data from consults to the OEF/OIF PTSD clinic for 18 months. PCMHI placed 129 consults and 91 (70.5%) were completed. Veterans referred by PCMHI tended to have increased consult completion in specialty care, higher rates of confirmed PTSD, however, no significant differences in reported PTSD symptoms, or follow-up visits in the OEF/OIF PTSD clinic compared to Veterans referred from the hospital at large. PCMHI potentially preserve resources, increases continuity of care, and increases treatment access for OEF/OIF/OND veterans.

KEYWORDS

Collaborative care, PTSD, Mental health, PCMHI

BACKGROUND

Veterans from the conflicts in Iraq and Afghanistan are returning home and enrolling in the Veterans Health Administration (VHA) in record numbers. These returning Operation Iraqi Freedom/Operation Enduring Freedom/Operation New Dawn (OEF/OIF/OND) warriors are presenting with significant psychiatric and psychosocial difficulties. Approximately 25% to 37% of returning veterans have received a mental health diagnosis, and greater than 60% of these individuals meet the criteria for two or more diagnoses [1, 2].

The most common mental health diagnosis among this population is Posttraumatic Stress Disorder (PTSD). More than half of all OEF/OIF/OND veterans who receive a mental health diagnosis receive a diagnosis of PTSD [1], which

Implications

Practice: Integrated care programs like the VHA's Primary Care Mental Health Integration program lead to increased continuity of care for OEF/OIF/OND veterans with PTSD, as well as preserve healthcare resources.

Policy: Resources should be directed toward further enhancement of integrated care programs and evaluation of such programs with a focus on mental health needs other than PTSD.

Research: Research needs to be directed towards implementation studies of integrated care and more comprehensive evaluations of such programs to include treatment outcome and cost-effectiveness.

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represents approximately 13% of all returning veterans. A research with Vietnam veterans has demonstrated that PTSD can result in lifelong difficulties, including increased health problems, lower quality of life, and increased comorbid mental health and social difficulties [3–5]. Erbes commented, "This further emphasizes the need to engage with returning Veterans early, before the symptoms have become chronic and potentially resistant to treatment. By providing prompt and effective care, providers hope to help Veterans avoid years or decades of impairment and distress suffered by substantial proportions of Veterans following the Vietnam war" [6]. Additionally, such early detection and intervention can lead to decreased overall costs and appropriate levels of healthcare utilization.

Since 2005–2006, the VHA has significantly increased funding for programs and staff to address the mental health needs of returning veterans. One such effort included earmarking a portion of mental health enhancement funds for the development of specialty care clinics focusing exclusively on PTSD for returning

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combat veterans. Another major program was the development of the Primary Care Mental Health Integration (PCMHI) program which emphasizes collaborative/integrated care of mental health needs (including PTSD), within the primary care setting. In fact, the combined Department of Defense and VHA expenditures to treat PTSD are expected to exceed \$200 million annually [7]. When there is such an exponential growth in services and resources, it begs the question “If we build it: Will it provide effective care for the Veterans who can benefit from it?”

Despite the significant commitment to address these issues, substantial barriers to treatment engagement remain [6–8]. The OEF/OIF/OND population has been found to be particularly skeptical of mental health treatment, difficult to engage, and hesitant to maintain treatment. For example, researchers using a multi-level assessment tool and only including those subjects meeting the requirements for a mental health disorder according to a “strict case definition” found that 38–45% of OEF/OIF/OND veterans who were deemed to have a mental health disorder indicated interest in receiving treatment and only 23–40% of those identified with a mental health concern received treatment for the disorder in the following 12 months [9, 10]. Furthermore, OEF/OIF/OND veterans have significantly lower rates of session attendance and higher rates of dropout when compared to a similar Vietnam veteran cohort [6]. Perceived stigma, which is substantially higher among OEF/OIF Veterans, likely contributes to these low adherence rates, as individuals with negative beliefs about mental health care have a decreased likelihood of engaging in mental health counseling as well as a decreased likelihood of medication compliance [8]. In addition to these barriers, some research suggests that racial disparities may exist with regard to the diagnosis and treatment of PTSD within the VHA. Specifically, African American veterans are less likely than Caucasian counterparts to receive the diagnosis of PTSD when seeking service connected disability, and African American veterans are also more likely to identify institutional barriers to treatment for PTSD [11, 12].

In an effort to address these concerns, the VHA mandated the implementation of the PCMHI program. The goals of this program are to increase identification of veterans needing mental health services, increase collaboration and shared responsibility of these patients, decrease stigma, improve continuity of care for veterans, and improve the efficiency of health care utilization. Within the program, there are four areas of clinical emphasis which include: (a) PTSD, (b) depression, (c) alcohol use disorders, and (d) anxiety. However, in practice, the collaboration efforts far exceed the four-limited areas, and at the St. Louis VAMC, there is a particular focus on the collaborative treatment of

individuals presenting with chronic health conditions (e.g., pain, diabetes, insomnia, and CHF).

As detailed, there are several aspects of collaborative care which include decreased stigma, increased access, potentially decreased costs, and improved quality of care. The present study was specifically designed to determine the impact of the PCMHI program on (a) the continuity of care for veterans referred to the PTSD specialty care clinic and (b) the possibility of racial disparities in the identification or access to treatment for PTSD, among OEF/OIF/OND veterans.

PCMHI AT THE ST. LOUIS VETERAN AFFAIRS MEDICAL CENTER

A detailed history of the development of the PCMHI program at the St. Louis Veteran Affairs Medical Center (VAMC) can be found in a previous publication [13]; therefore, only a summary is presented below. In September 2007, the St. Louis VAMC initiated the local PCMHI program, which aimed to transform not only the way mental health services were provided, but how healthcare as a whole was delivered to the veteran population. The goal of the St. Louis Initiative for Integrated Care Excellence was to integrate mental health and primary care services, based on a collaborative care model. Initially, seven psychologists were embedded in primary care clinics, with an additional nurse in a support/non-clinical role. Since its inception, another full-time psychologist, full-time psychiatrist, and postdoctoral fellow have been added.

In practice, these seven psychologists were embedded in the primary care clinics and provided an office/exam room directly opposite or adjacent to the lead primary care provider on the assigned team. Scheduling grids were developed on 30-min cycles (i.e., 8:00 a.m. blocked for walk-in, 8:30 a.m. scheduled patient, 9:00 a.m. blocked for walk-in, etc.). In developing such a clinic, there would be walk-in availability every 30 min. Prior to role-out, numerous in-services were provided to primary care providers focused on the concept of collaborative care, increased access, and shared responsibility of the patient. A crucial element was replacing traditional consults with warm handoffs of patients. Warm hand-offs included the team nurse or provider identifying a patient in need and walking the patient to the psychologist's office while providing an introduction and identification of the main problem. In nearly all cases, the patient was seen immediately or on the same day. After the initial 30-min evaluation, a decision was made often in concert with the primary care provider (PCP) to either (a) provide time limited (six sessions) brief (30 min) evidence-based therapy, (b) provide a referral to specialty mental health care, (c) engage another medical service (i.e., neurology and endocrine), or (d) conclude that no follow-up was needed.

Based on this decision tree, approximately 22% of patients received a referral to some form of specialty mental health (i.e., mental health clinic, PTSD clinic, substance abuse, and homeless program), with 4% of patients receiving a referral to the OEF/OIF PTSD clinic. The remaining 80% were either treated in the PCMHI or declined services, with the majority following up for at least one additional session. The results from this systematic change in health care delivery resulted in significant changes including increased access to mental health services, increased continuity of care, and an increased willingness to treat patients with mental health needs within the primary care setting as evidenced by changed prescription patterns [13].

The above description is in stark contrast to the previous methods of consultation which included a computer-generated consult being sent from the provider to specialty mental health. In St. Louis, the problems of stigma, access, and continuity of care were heightened by the reality of having a two-campus hospital with the majority of primary care services located at the urban location, and the specialty mental health services located over 30-min away in a suburban setting. While the implementation of PCMHI has been successful within the primary care clinics, providers in other specialty clinic (i.e., nephrology and infectious disease) do not have access to this initiative and rely on the older system of referring patients in need of mental health care. In addition, a minority of PCPs remained reluctant to change and continued to submit electronic consults.

METHOD

The Saint Louis VAMC's Institutional Review Board reviewed and approved this retrospective, archival study. First, we identified all veterans who had a consult to the OEF/OIF PTSD clinic during the consecutive 18-month period between 1 January 2009 and 30 June 2010. This was accomplished through a series of queries to the VISTA system which is part of the electronic medical record system used by the VHA. We completed comprehensive medical record reviews for all 471 veterans who were referred to the clinic during this time frame. Information gathered from medical records included demographic information (e.g., age, gender, race/ethnicity, and marital status), where consults took place (i.e., date consult was placed and date consult was completed), dates of treatment in OEF/OIF clinic, medical and mental health diagnoses, and results of standardized validated assessment measures, specifically the Posttraumatic Stress Disorder Checklist-Military version (PCL-M) [14] and the Beck Depression Inventory-Second Edition (BDI-II) [15].

Providers who generated consults to this specialty care clinic were classified as either: (a) PCMHI team

members, (b) primary care providers, (c) mental health providers, or (d) other (i.e., providers in the emergency room or specialty medical clinics). Consults initiated by PCMHI team members were compared to those that were initiated elsewhere in the hospital system on all major benchmarks which included: completion rate, consult accuracy (included accuracy of diagnosis and administrative accuracy), and time in treatment. Additional comparisons were completed on symptom severity of PTSD and depression.

When examining consults placed by PCPs, an informal primary care specialty clinic for OEF/OIF veterans was identified. This clinic is staffed by one PCP and was not formally recognized or coded differently than any other clinic. Moreover, it was located adjacent to the OEF/OIF PTSD clinic, allowing for increased communication and collaboration between clinics. Because of differences between this clinic and all other primary care clinics, we excluded this clinic from all analyses.

VARIABLE DEFINITIONS

Consult completion—Consults were considered complete if the veteran was assessed in the OEF/OIF PTSD specialty clinic on at least one occasion.

Consult accuracy—Consult accuracy was measured using two metrics, diagnostic accuracy and administrative accuracy. First, we classified consults as diagnostically accurate if the veteran was received a confirmatory diagnosis of PTSD by the OEF/OIF PTSD specialty clinic within the first two visits to that clinic. (Clinicians in the OEF/OIF PTSD clinic utilize a comprehensive clinical interview process and PCL-M scores to determine diagnosis.) The second metric, administrative accuracy, examined consults that were cancelled for administrative reasons. As part of the process in responding to consults, the staff of the OEF/OIF PTSD team examines consults that are placed to their clinic and can administratively cancel consults when necessary. The consults were classified as cancelled if the veteran was never evaluated in the OEF/OIF PTSD clinic. We examined the reasons why consults were cancelled and the percent of cancelled consults placed by PCMHI providers as compared to consults placed from providers elsewhere in the hospital.

RESULTS

Demographics

Of the 398 unique veterans referred to the OEF/OIF PTSD Clinic, 70% were Caucasian and 17.6% were African American. This is inconsistent with the medical center's population as a whole, which suggests a more even racial breakdown (approximately 57% Caucasian, 43% African American). While this appears to be a disparate finding, in

actuality, the population of OEF/OIF veterans at this location is 76% Caucasian and 18.4% African American which nearly mirrors the consult placements. Veterans who reported their race as American Indian, Native Alaskan, Asian, Hispanic, Native Hawaiian, Pacific Islander, or Nigerian represented 2% of the population. Veterans who did not answer or did not know their race comprised 10.1% of the population. The majority of those referred (62.7%) were army veterans, with smaller percentages of marine (24.4%), air force (7.6%), navy (4.5%), and coast guard (0.3%) veterans. The average age of referred veterans was 31.7 (SD=7.6). We also included an examination of service-connected disability, which is a physical or mental health disability that VHA determines was incurred or aggravated while on active duty in the military and in the line of duty. In this study, more than half of the veterans were service connected for some condition (68.3%) and approximately 40% of the total population was service connected specifically for PTSD.

Consult completion rates

A total of 405 consults were placed to the OEF/OIF PTSD clinic within the study time frame. (While 398 veterans were referred, seven veterans had two consults placed on their behalf, resulting in a total of 405 consults placed.) We classified 260 (64.2%) as complete (see Table 1). PCMHI team members placed 129 consults, with a consult completion rate of 70.5%. PCPs placed 149 consults, with a consult completion rate of 55.7%, which resulted in significantly higher percent of completed consults from PCMHI as compared to consults from PCPs ($X^2=6.50$, $p=0.01$).

We further examined consult completion rates by isolating consults placed by providers in areas of the hospital that did not have integrated care or who had less than optimal integrated care. One primary care clinic was identified as having less than optimal care due to inconsistent implementation of the PCMHI model and inconsistent staffing (i.e., multiple extended leaves by psychologist and inability to backfill position) in that clinic. There were 83 consults placed from clinics (i.e., specialty medical services, infectious disease, and orthopedics) without integrated care or clinics with problematic

integrated care. These consults had a 48.2% completion rate.

Consult accuracy

Diagnostic accuracy—As shown in Table 2, 72.5% of consults placed by PCMHI team members were classified as diagnostically accurate (i.e., the veteran was diagnosed with PTSD by the PTSD clinic). This was not significantly different ($X^2=1.52$, $p=0.21$) from the percent (63.8%) of consults placed by PCPs that were classified as diagnostically accurate.

Administrative accuracy—In this study, reasons that OEF/OIF PTSD team members administratively cancelled consults were that: (a) the patient needed to be assessed by a mental health provider, (b) the patient was already being followed by specialty mental health at this Veterans Affairs (VA) or another VA, (c) the patient declined treatment, (d) the patient was already being followed in the OEF/OIF PTSD specialty clinic, (e) the patient was not an OEF/OIF combat veteran, and (f) the patient was not appropriate for the OEF/OIF PTSD clinic for another reason. Table 3 shows the number of consults that were cancelled for each of these reasons.

A total of seven (5%) consults placed by PCMHI team members were cancelled due to the administrative problems listed above, whereas 59 (21.3%) consults placed by the hospital at large were cancelled for these reasons (as shown in Table 3). No consults placed by PCMHI were cancelled due to the patient declining treatment when contacted by the OEF/OIF PTSD clinic or due to the patient already being followed in the OEF/OIF PTSD clinic, another specialty mental health clinic, or another VA.

PCMHI model adherence

As described in the introduction, the PCMHI model suggests efficient assessment, brief interventions when appropriate, and expedited algorithmic referrals when the treatment problems were beyond the scope of the PCMHI program. We assessed PCMHI model adherence by examining the number of sessions that were completed in the primary care setting prior to referral to the OEF/OIF PTSD

Table 1 | Consult completion rates by provider type

Type of provider	No. of consults placed	No. of consults complete	Percentage of consults completed (%)
PCMHI team members	129	91	70.5
PCPs	149	83	55.7
Mental health providers	97	71	73.2
Other	30	15	50
Total	405	260	64.2

PCP Primary Care Provider, PCMHI Primary Care Mental Health Integration

Table 2 | PTSD diagnosis upon initial visit to OEF/OIF PTSD clinic

Type of provider	No. of consults with PTSD diagnosis	% of completed consults with PTSD diagnosis (%)
PCMHI team members	66	72.5
PCPs	51	63.8
Mental health providers	52	73.2
Other	10	66.6

PCP Primary Care Provider, *PCMHI* Primary Care Mental Health Integration

specialty clinic, the PCL-M and BDI-II scores of veterans referred to that clinic upon initial visit, and the number of treatment visits that veterans completed in the OEF/OIF PTSD clinic. While the total average number of visits in the PCMHI program was 2.62 for all visits (not limited to PTSD or OEF/OIF/OND population), during this time period, PCMHI team members referred veterans to the OEF/OIF PTSD clinic after an average of one session with the veteran in the primary care setting.

The results of the next several analyses were not statistically significant, but are clinically noteworthy due to the findings that emerged. The average PCL-M score for veterans referred from PCMHI was 60.48 (SD=12.68) and the average PCL-M score for veterans referred from other areas of the hospital was 58.46 (SD=13.10), $t(227)=1.072$, $p=0.285$. The average BDI-II score for veterans referred from PCMHI was 29.33 (SD=11.29) and the average score for veterans referred by the hospital at large was 27.62 (SD=11.73), $t(218)=0.994$, $p=0.321$. Furthermore, veterans referred from PCMHI had an average of 6.98 (SD=7.13) visits in the clinic and veterans referred from other areas of the hospital had an average of 8.28 (SD=10.47), $t(330)=-1.30$, $p=0.265$, visits in the clinic.

Possible disparities

Overall, the St. Louis VAMC serves a population that is 57% Caucasian and 42% African American. The results of this study showed that 72.8% of veterans referred to the OEF/OIF PTSD specialty clinic were Caucasian and 15.5% were African American. Since these demographic characteristics are inconsistent with the known population of the medical center in general, it was hypothesized that

health care disparities may be responsible. However, the OEF/OIF population of the medical center at large is 76% Caucasian and 18.4% African American, which is consistent with the demographics of the veterans in this study. Therefore, these findings do not necessarily indicate the presence of health care disparities. However, when the next level of evaluation was completed, which included examining the completion rates of these consults, an interesting trend emerged: Only 12 of the 20 consults for African American patients (60%) were completed while 69 of the 94 (73.4%) consults for Caucasian veterans were completed. Thus, it appears that when the consult originated from the PCMHI setting, it was less likely to be completed if the veteran was African American.

DISCUSSION

The VHA has committed significant funds, resources, and effort into the development of a comprehensive integrated/collaborative care program. This study aimed to examine PCMHI's direct impact on the treatment and care of post-deployment veterans with probable PTSD. What we found was that the PCMHI program tends to (a) increase access to specialty care, (b) decrease errant consults which consume resources and delay access to appropriate treatment, and (c) more appropriately identify an accurate diagnosis of PTSD compared with other referring clinicians within the hospital. While there were no significant differences found with regard to n severity of symptoms for referred patients or length of treatment engagement when referred to specialty care, further investigation is needed.

We also found consistent fidelity to aspects of the collaborative care model. OEF/OIF/OND veterans

Table 3 | Numbers of administratively cancelled consults

Reasons consults were administratively cancelled	No. of PCMHI consults cancelled for this reason	No. of all other consults cancelled for this reason
Pt needed to be assessed by MH provider	3	19
Pt already being followed in specialty MH or another VA	0	15
Pt declined treatment	0	10
Pt already being followed in OEF/OIF PTSD specialty clinic	0	4
Pt not an OEF/OIF combat veteran	1	2
Pt not appropriate for another reason	3	9

Pt patient, *MH* mental health, *OEF/OIF* Operation Enduring Freedom/Operation Iraqi Freedom

who were identified with PTSD received a consult to specialty care from PCMHI quickly, efficiently, and with little interruption of care. The increased likelihood of completed consults can have profound system-wide effects. When there is a one “no show”, in addition to the missed opportunity, it in essence prohibits another veteran from receiving treatment in a timely manner and increases overall wait times to specialty care. Additionally, veterans who were referred from PCMHI were likely to have fewer sessions in specialty care. A more detailed analysis and chart review is warranted to examine if this represented completion of treatment or early termination.

Lastly, there were interesting findings with regard to the possibility of racial disparities. Upon first glance, it appeared that there was a large racial disparity, based on comparison with the entire St. Louis VAMC population. However, it became apparent that the OEF/OIF/OND population in St. Louis is not representative of the entire population, and referrals occurred at an appropriate rate. However, it does appear that African American veterans referred from PCMHI were less likely to have a completed consult. The reason for this possible disparity is unknown at this time but worthy of further study.

There are several limitations to this study, including relatively small sample size, a dearth of information on treatment outcome, as well as no information on actual cost-effectiveness. Additionally, the results may not generalize to other VA settings, as the PCMHI staffing, while meeting an ideal in St. Louis, likely far exceeds similar programs in the VA system. However, the findings generally do support the hypothesis that the PCMHI program and similar collaborative care models do increase access to mental health and provide a significant “bridge” into specialty care for veterans in most need of that service. It is of note that this study had a limited focus on

continuity of care and the scope of collaborative care programs in general far exceed what was examined in this study.

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